Massage

by Patricia J. Benjamin

Massage therapy is an ancient remedy that is regaining credibility among the general public, and in medicine, for the treatment of a variety of ailments. A 1993 study published in the *New England Journal of Medicine* cited massage as the third most used form of alternative therapy in the United States. Using only their hands, practitioners of this low-tech therapy are adding a dimension to modern healing practices that is missing in today's high-tech medicine.

Reports of research on the efficacy of massage therapy have been turning up in medical journals for the past two decades. Facts for Physicians, compiled by the American Massage Therapy Association, lists studies in which therapeutic massage has lessened or relieved symptoms of patients with arthritis, asthma, circulatory problems, headache, immune disorders, insomnia, myofascial pain, and temporomandibular joint dysfunction.

The Touch Research Institute at the University of Miami School of Medicine has generated many studies on the uses of massage in pediatrics. For example, massage has been found effective to enhance general development and weight gain in preterm and cocaine-exposed infants, decrease cortisol levels and asthma attacks in asthmatic children, improve the behavior of autistic children, and lessen the anxiety of children with post-traumatic stress disorder. The TRI web site includes an ever-growing list of such research.

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Massage is also being used in conjunction with physical therapy for rehabilitation of injuries and musculoskeletal disorders. Although physical rehabilitation is an important aspect, this article focuses on the more general therapeutic effects of massage.

The form of massage most commonly practiced today in the United States is based on the Western massage tradition, which evolved in Europe and in the U.S. over the past two centuries. Massage therapy also includes various joint movements, but I concentrate here on the techniques of soft tissue manipulation.

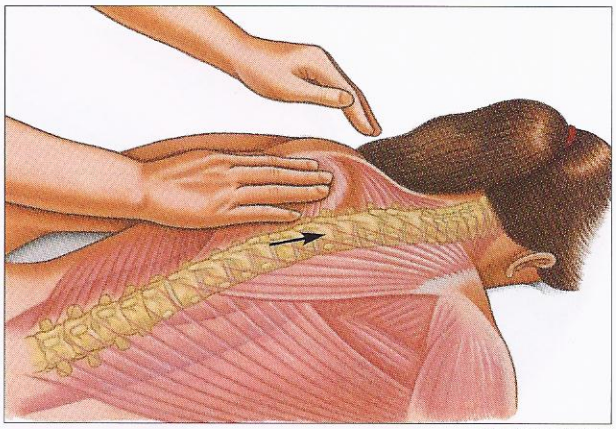
The five technique categories commonly used to describe Western massage are effleurage (gliding or sliding), petrissage (squeezing, lifting, or pressing), friction, tapotement (percussion), and vibration. Touch without movement is also part of Western massage; examples are passive touch (hand placement without movement) and static pressure or compression.

Massage therapy is more than its techniques. The way techniques are applied also helps determine the effect. The sequence of techniques, quality of movement, pressure, pace, and rhythm are all important factors that affect the physiological and psychological outcomes of a treatment.

The art and science of massage therapy involves choosing and applying techniques skillfully to accomplish specific therapeutic goals. Knowledgeable practitioners may choose techniques that have potential to produce a certain effect, but the actual effect depends on the practitioner's skill in performing the technique plus the condition and receptivity of the person receiving the massage. Just as in any therapy, choosing the wrong techniques can result in no therapeutic effects or even a harmful effect.

The concept of "vis medicatrix naturae" is central to understanding the therapeutic benefits of massage. This belief, extolled by the Hippocratic school in

Effleurage



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Effleurage techniques glide or slide over the skin in a smooth, continuous motion, usually in one direction. Varying degrees of pressure are used, depending on intent. Effleurage is typically used for applying oil or cream, as a transition and connecting technique, and for enhancing circulation.

Superficial soft tissues are compressed as the hand applies pressure and slides over the skin. The mechanical action of effleurage helps move fluids, creates warmth, stimulates touch receptors, and stretches the skin and underlying tissues. Effleurage is traditionally believed to enhance the return of blood to the heart and lungs when it is applied on the limbs with moderate to heavy pressure. This is the origin of the dictum that effleurage should always be applied in the direction of the heart. In fact, light effleurage may be applied in any direction without harm.

Performed slowly and smoothly with light to moderate pressure, effleurage can stimulate the parasympathetic nervous system and thereby evoke the relaxation response. A back massage is often used to relieve stress and promote good sleep. Effleurage can be comforting and is one of the primary massage techniques used when the goal is to reduce anxiety.

ancient Greece, recognizes the innate healing processes of nature. In this paradigm, the job of the healer is to provide an environment conducive to healing and to enhance natural healing processes. It is not that massage "cures" specific ailments, but rather that it enhances the body's own healing mechanisms, and that makes massage a valuable healing agent for a broad range of conditions.

Certain basic effects of massage account for most of its therapeutic benefits: enhanced circulation of fluids, improved immune system function, stress reduction, and muscle relaxation. Because the human body operates as a unified whole, these processes are related, but each can be considered separately for its therapeutic contribution.

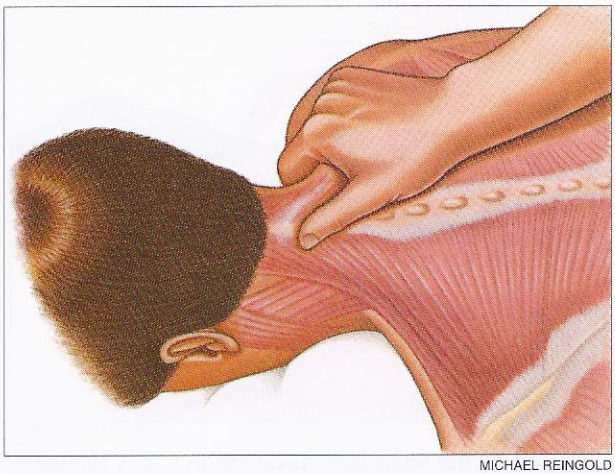
The human body is more than 60% water. The circulatory and lymphatic systems rely specifically on fluid circulation to carry out their functions. General fluid circulation in these system is a key to cellular health. It brings nutrients to cells and removes wastes. Circulation is also important for tissue repair, as building blocks for new tissues are brought to an area and damaged cells are removed. When pathogens enter the body, fluids help deliver macrophages to attack the invaders. The forces of protection against pathogens are transported by fluids.

A major enhancer of fluid circulation is movement, either active exercise or passive soft tissue manipulation. The mechanical action of squeezing, stretching, and sliding along tissues while compressing them moves fluids. Tense muscles may interfere with circulation, and massage that helps bring muscles to a relaxed state also helps improve circulation. Blood vessels dilate as well, bringing warmth to the area.

Massage is particularly useful for people who for some reason cannot or do not get enough exercise, such as those confined to bed or in wheelchairs, or the clinically depressed. It is also beneficial for people in rehabilitation or on rigorous strength-building regimens to help in the recovery phase, just as athletes use massage to reduce post-exercise soreness by flushing the by-products of exercise from the muscles.

One of the most important findings regarding massage as a healing agent is that massage seems to improve immune system function. Recent studies show that massage increases white blood cell count, activates natural killer cells, reduces anxiety, and decreases cortisol levels. High cortisol levels inflict wear and tear on the body over a period of time, inhibiting the production and release of white blood cells, blocking B and T cell functions, and interfering with production of interleukins, which are important

Petrissage



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Petrissage techniques lift, wring, or squeeze soft tissues with a kneading motion, or compress and roll tissues under or between the hands. Petrissage is performed by compressing and releasing tissues in a rhythmic manner. Veins in the soft tissues alternately empty and refill, relieving congestion in the capillary beds and improving the flow into them from the arteries. The flow of lymph is enhanced in the same way.

The motions of petrissage increase the blood supply to the muscles, "milk" muscle tissue of accumulated metabolites, assist venous return, and generally increase local circulation. The mechanical action of compressing muscles also helps broaden and separate muscle fibers. This is thought to improve tissue repair and the formation of healthy scar tissue. The rhythmic action of petrissage also warms the muscles and helps them to relax.

in communication among white cells. Cortisol level is often used as a variable to measure the amount of stress people are experiencing, and decreased cortisol indicates stress reduction.

The first major study to link massage and improved immunity was conducted by the Touch Research Institute in 1996. In a group of 29 HIV-positive men who received daily 45-minute massages for a month, the majority had a significant increase in the number of NK cells and the activity of those cells. The men also had reduced anxiety, stress, and cortisol levels, as well as increased serotonin levels, during massage.

In an ongoing study at TRI, breast cancer patients who received massage three times a week for five weeks showed improvements in their immune function. Blood, urine, and saliva samples indicated that NK cell counts increased in those receiving massage focused on promoting relaxation.

There are a number of possible psychological and physiological reasons why massage tends to be relaxing. The reclining position alone can be an unconscious signal to relax. Techniques for relaxation include primarily effleurage and petrissage, which induce a sense of comfort. Pleasantly scented oils can add to the relaxing effects. The patient's passive attitude in accepting massage can itself be a lesson in relaxing and letting go.

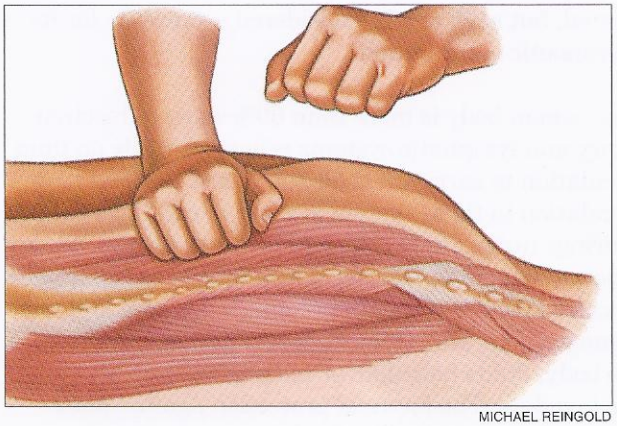
A soothing massage can trigger the relaxation response, stimulating the parasympathetic nervous system. Effects include reduced anxiety, lower metabolic rate and thus less strain on the body's energy resources, decreased muscle tension, increased blood

Tapotement

Tapotement consists of a series of brisk percussive movements following each other in rapid, alternating fashion. Its many variations include hacking, clapping, cupping, and tapping. The movement is light, rapid, and rhythmic.

Tapotement is generally stimulating, activating sensory nerve endings in the skin, especially the mechanoreceptors. This increase in sensory input is thought to help relieve pain via the spinal gating mechanism, blocking pain signals from reaching the brain.

Tapotement over the perispinal muscles may induce a general sense of warmth and invigoration by stimulating the sensory branches of posterior primary rami. Percussion in this area is traditionally used to end massage of the back, especially in sport and fitness settings.



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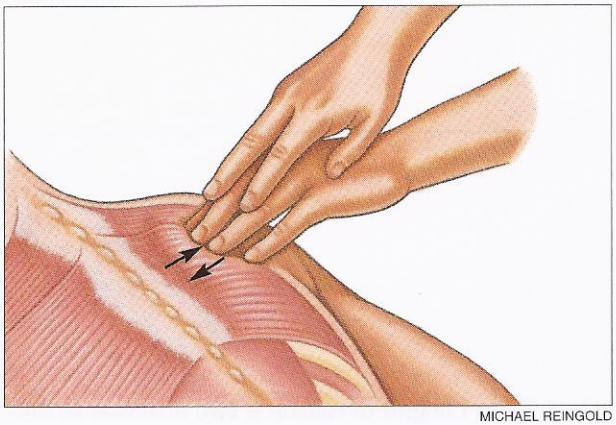
Friction



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Friction is performed by rubbing two surfaces over each other repeatedly. Friction between the two surfaces generates heat and results in increased local circulation because of vasodilation. Superficial friction between the practitioner's hand and the skin of the receiver is the mainstay of an old-time rubdown.

Deep friction is created by causing movement between deeper tissues, such as moving a tendon over underlying tissues. In addition to generating heat, the shearing action may serve to separate tissues that are sticking together. A commonly used variation of this technique, called deep transverse friction, is often used in injury rehabilitation because it breaks adhesions and promotes formation of healthy scar tissue.

flow to internal organs, slower heart rate, deeper breathing, decreased blood pressure in hypertensive people, better digestion, and improved quality of sleep.

Relaxing massage, especially on the back, has been the subject of several studies conducted by nurses. Their results suggest that relaxing massage has the potential to improve communication with elderly institutionalized patients, increase the comfort reported by cardiac patients, and reduce the perceived level of pain and anxiety in hospitalized cancer patients. These beneficial effects of relaxation massage may be applied to an endless variety of medical situations.

Relaxation massage may also help in the treatment of patients with medical conditions worsened by stress. For example, in one study, patients with chronic inflammatory bowel disease, ulcerative colitis, or Crohn's disease who regularly received relaxation massage reported fewer episodes of pain and disability from their disease.

Vibration

Vibration is an oscillating, quivering, or trembling movement back and forth or up and down, performed quickly and repeatedly. The vibration may be fine and applied to a small area with the fingertips, or it may be coarse and involve shaking a muscle belly back and forth.

Vibration over the abdomen stimulates the organs of digestion and elimination. Coarse vibration to a group of muscles may help a recipient become aware of holding tension or may bring circulation to an area.

Vibration applied over a period of time is often best done by a machine. Electrical devices vary in being able to produce fine to coarse vibration. Some devices use sound for subtle vibration, and others are mechanical.

Chronic muscle hypertension interferes with the body's healing processes in a number of ways. For example, muscle tightness impedes local circulation by squeezing off blood and lymph vessels. This not only inhibits healing in the local area but also causes pain, which contributes to discomfort and distress.

In a phenomenon called "armoring," muscles remain in a state of chronic hypertension in response to a past trauma, as if they are ready to protect the body from further insult. For example, the muscles used to brace oneself during a car accident may remain contracted long after the accident, as an emotional response to an imagined threat. Armoring is counterproductive because muscle tension causes ischemia, pain, and anxiety, and it activates the sympathetic nervous system, causing chronic stress. Massage helps relieve muscle tension by activating the parasympathetic nervous system and also increases local circulation.

Massage is often characterized as palliative in allopathic medicine. That is, it is viewed as making the patient feel better but not curing the ailment. As research into the effects of massage continues to shed more light on its therapeutic benefits, the mechanisms by which it works will also be better understood. From the natural healing perspective, those very things that make the patient feel better may also aid in the healing process and can be as much a part of the cure as the high-tech alternatives.

FOR MORE INFORMATION

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